

## SEQUENCE LISTING

<110> Centro de Ingeniería Genética y Biotecnología

5 <120> Artificial promoter for the expression of DNA sequences in plant cells

<130> Artificial promoter

10 <140> 0000  
<141> 2002-11-18

<160> 22

15 <170> PatentIn Ver. 2.1

<210> 1  
<211> 86  
<212> DNA

20 <213> Artificial sequence

<220>  
<223> Artificial sequence description:  
Translational enhancer Eureka.

25 <400> 1  
gaaacaaatt gaacatcatt ctatcaatac aacacaaaca caacacaact caatcattta 60  
tttgacaaca caactaaaca accatg 86

30 <210> 2  
<211> 198  
<212> DNA  
<213>

35 <220>  
<223> Artificial sequence description:  
Synthetic fragment P35AcU.

40 <400> 2  
gaattctata tataggaagt tcatttcatt tggagccccc caaccctacc accaccacca 60  
ccaccacctc ctccttcaca caacacacac acaacagatc tcccccatcc tccctcccg 120  
cgcgccgcgc aacacctggt aagatggctg tgcgctcaga tatatatagt gatatgcact 180  
acaaagatca taactagt 198

45 <210> 3  
<211> 231  
<212> DNA  
<213>

50 <220>  
<223> Artificial sequence description:  
Synthetic fragment I-U/Ac.

55 <400> 3  
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ttttccgtct cgtctcgatc tttggccttg gtagtttggg ggcgagaggc ggcttcgtcg 120  
cccagatcgg tgcgcgtttt tttatttggg ggggcgggat ctgcgggctg ggtctcggcg 180  
60 tgcggccgga ttctcgcggg gaatggggct ctcgatgtg gatccgagct c 231

<210> 4  
 <211> 255  
 5 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Artificial sequence description:  
 10 Synthetic fragment I-Ac/U.

<400> 4  
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 agatcaggaa gaggggaaaa gggcactatg gtttaatttt tatatatattc tgctgctgct 120  
 15 cgtcaggatt agatgtgctt gatctttctt tcttcttttt gtgggtagaa tttgaatccc 180  
 tcagcattgt tcatcggtag tttttctttt gtcgatgctc accctgttgt ttggtgtttt 240  
 tatactagtg agctc 255

20 <210> 5  
 <211> 93  
 <212> DNA  
 <213> Artificial sequence

25 <220>  
 <223> Artificial sequence Description:  
 Synthetic fragment Init.

<400> 5  
 30 ctagtggcta tcctgacacg gtctctttgt caaatatctc tgtgtgcagg tataactgca 60  
 ggaaacaaca acaataacca tgggtctagag ctc 93

<210> 6  
 35 <211> 692  
 <212> DNA  
 <213>

<220>  
 40 <223> Artificial sequence description:  
 Artificial Exon/Intron/Exon ART.

<400> 6  
 45 accaccacca ccaccaccac ctctctcttc acacaacaca cacacaacag atctccccca 60  
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 agtgatatgc actacaaaga tcataactag accgcgcgct ccccccccc ccctctctac 180  
 ctctctctct tctttctccg tttttttttt cgtctctgto tcgatctttg gccttggtag 240  
 tttgggggag agaggcggtc tcgtcgccca gatcggtgag cgttttttta tttggagggg 300  
 cgggatctcg cggctgggtc tcggcggtgc gccggattct cgcggggaat ggggctctcg 360  
 50 gatgtggatc tgatccgcgc ttgttggggg agatatgggg cgtttaaaat ttcccatgc 420  
 taaacaagat caggaagagg ggaagaggc actatgggtt aatttttata tatttctgct 480  
 gctgctcgto aggattagat gtgcttgatc tttctttctt ctttttgttg gtagaatttg 540  
 aatccctcag cattgttcat cggtagtttt tcttttgtcg atgctacccc tgttgttttg 600  
 55 tgtttttata ctagtggcta tcctgacacg gtctctttgt caaatatctc tgtgtgcagg 660  
 tataactgca ggaaacaaca acaataacca tg 692

<210> 7  
 60 <211> 750  
 <212> DNA  
 <213>

<220>

<223> Artificial sequence description:

pBS-ART vector sequence between the restriction sites EcoRI and SacI.

<400> 7

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ccaccacctc ctccttcaca caacacacac acaacagatc tcccccatcc tccctcccgt 120
10 cgcgcgcgcg aacacctggt aagatggctg tgcgctcaga tatatatagt gatatgcact 180
acaagatca taactagacc gccgcctccc cccccccccc tctctacctt ctctctttct 240
ttctccgttt ttttttccg tctcgtctcg atctttggcc ttggtagttt gggggcgaga 300
ggcggccttcg tcgccagat cgggtgcgctg ttttttattt ggagggcgcg gatctcgcg 360
ctgggtctcg gcgtgcggcc ggattctcgc ggggaatggg gctctcggat gtggatctga 420
15 tccgcggttg ttgggggaga tatggggcgt ttaaaatttc gccatgctaa acaagatcag 480
gaagagggga aaagggcact atggtttaat ttttatatat ttctgctgct gctcgtcagg 540
attagatgtg cttgatcttt ctttcttctt tttgtgggta gaatttgaat ccctcagcat 600
tgttcatcgg tagtttttct tttgtcgatg ctcaccctgt tgtttggtgt tttatacta 660
gtggctatcc tgacacggtc tctttgtcaa atatctctgt gtgcagggtat aactgcagga 720
20 aacaacaaca ataaccatgg tctagagctc                                     750

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<210> 8

<211> 757

<212> DNA

<213> Artificial sequence

<220>

<223> Artificial sequence description:

Artificial Exon/Intron/Exon ARTE.

<400> 8

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35 tctccctcc cgtcgcgcg cgcaacacct ggtaagatgg ctgtgcgctc agatatatat 120
agtgatatgc actacaaaga tcataactag accgcgcgct cccccccccc ccctctctac 180
cttctctctt tctttctccg tttttttttt cgtctcgtc tcgatctttg gccttggtag 240
tttgggggag agaggcggt tcgtcgccca gatcgggtgc cgttttttta tttggagggg 300
cgggatctcg cggctgggtc tcggcgtgcg gccggattct cgcggggaat ggggctctcg 360
40 gatgtggatc tgatccgcg ttgttggggg agatatgggg cgtttaaata ttcgccatgc 420
taaacaagat caggaagagg ggaagaggc actatggttt aatttttata tatttctgct 480
gctgctcgtc aggattagat gtgcttgatc tttctttctt ctttttgtgg gtagaatttg 540
aatccctcag cattgttcat cggtagtttt tcttttgcg atgctcacc tgttggttg 600
tgtttttata ctagtggcta tcctgacacg gtctctttgt caaatatctc tgtgtgcagg 660
45 tataactgca ggaacaaat tgaacatcat tctatcaata caacacaaac acaacacaac 720
tcaatcattt atttgacaac acaactaaac aacctg                                     757

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<210> 9

<211> 815

<212> DNA

<213> Artificial sequence

<220>

<223> Artificial sequence description:

pPARTE vector sequence between the restriction sites EcoRI and SacI.

<400> 9

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gaattctata tataggaagt tcatttcatt tggagccccc caaccctacc accaccacca 60
ccaccacctc ctccttcaca caacacacac acaacagatc tcccccatcc tccctcccgt 120

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cgcgccgcgc aacacctggt aagatggctg tgcgctcaga tatatatagt gatatgcact 180
acaaagatca taactagacc gccgcctccc ccccccccc tctctacctt ctctctttct 240
ttctccgttt tttttttccg tctcgtctcg atctttggcc ttggtagttt gggggcgaga 300
ggcggcttcg tcgcccagat cggtgccgct ttttttattt ggaggggcgg gatctcgcgg 360
5 ctgggtctcg gcgtgcggcc ggattctcgc ggggaatggg gctctcggat gtggatctga 420
tccgcggttg ttgggggaga tatggggcgt ttaaaatttc gccatgctaa acaagatcag 480
gaagagggga aaagggcact atggtttaat ttttatatat ttctgctgct gctcgtcagg 540
attagatgtg cttgatcttt ctttcttctt tttgtgggta gaatttgaat cctcagcat 600
10 tgttcacggt tagtttttct tttgtcgatg ctaccctgt tgtttgtgt tttatacta 660
gtggctatcc tgacacggtc tctttgtcaa atatctctgt gtgcaggat aactgcagga 720
aacaattga acatcattct atcaatacaa cacaacaca acacaactca atcatttatt 780
tgacaacaca actaaacaac catggtctag agctc 815

15 <210> 10
    <211> 184
    <212> DNA
    <213> Artificial sequence

20 <220>
    <223> Artificial sequence description:
        Synthetic fragment En-Ac1.

25 <400> 10
    atcaccgtga gttgtccgca ccaccgcacg tctcgcagcc aaaaaaaaa aaagaaagaa 60
    aaaaaagaaa aagaaaaaac agcagggtggg tccgggtcgt gggggccgga aaagcgagga 120
    ggatcgcgag cagcgacgag gccggccctc cctccgcttc caaagaaacg ccccccatca 180
    attc 184

30 <210> 11
    <211> 94
    <212> DNA
    <213> Artificial sequence

35 <220>
    <223> Artificial sequence description:
        Synthetic fragment En-Ac2.

40 <400> 11
    aagcttgata tccatagcaa gccagccca acccaaccca acccaaccca cccagtgca 60
    gccactggc aaatagtctc cacaccccg cact 94

45 <210> 12
    <211> 1087
    <212> DNA
    <213> Artificial sequence

50 <220>
    <223> Artificial sequence description:
        pAPARTE vector sequence between the restriction sites HindIII y
        SacI.

55 <400> 12
    aagcttgata tccatagcaa gccagccca acccaaccca acccaaccca cccagtgca 60
    gccactggc aaatagtctc cacaccccg cactatcacc gtgagttgtc cgcaccaccg 120
    cacgtctcgc agcaaaaaa aaaaaaagaa agaaaaaaa gaaaaagaaa aaacagcagg 180
    tgggtccggg tcgtgggggc cggaaaagcg aggaggatcg cgagcagcga cgaggccggc 240
60 cctccctccg cttccaaaga aacgcccccc atcaattcta tatataggaa gttcatttca 300
    tttggagccc cccaacccta ccaccaccac caccaccacc tcctccttca cacaacacac 360

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acacaacaga tctccccat cctccctccc gtcgcgcgcg gcaacacctg gtaagatggc 420  
 tgtgcgctca gatatatata gtgatatgca ctacaaagat cataactaga ccgccgcctc 480  
 cccccccccc cctctctacc ttctctcttt cttctctcgt tttttttttc cgtctcgtct 540  
 cgatcctttg ccttggtagt ttgggggcga gaggcggcct cgctgcccag atcgggtgcgc 600  
 5 gtttttttat ttggaggggc gggatctcgc ggctgggtct cggcgtgcgc ccggattctc 660  
 gcggggaatg gggctctcgc atgtggatct gatccgcctg tgttggggga gatatgggc 720  
 gtttaaaatt tcgcatgct aaacaagatc aggaagagg gaaaaggga ctatgggtta 780  
 atttttatat atttctgctg ctgctcgtca ggattagatg tgcttgatct ttctttcttc 840  
 10 tttttgtggg tagaatttga atccctcagc attgttcac cgttagtttt cttttgtcga 900  
 tgctcaccct gttgtttggt gtttttatac tagtggctat cctgacacgg tctctttgtc 960  
 aaatatctct gtgtgcaggt ataactgcag gaaacaaatt gaacatcatt ctatcaatac 1020  
 aacacaaaca caacacaact caatcattta ttgacaaca caactaaaca accatggtct 1080  
 agagctc 1087

15  
 <210> 13  
 <211> 31  
 <212> ADN  
 <213> Artificial sequence

20  
 <220>  
 <223> Artificial sequence description:  
 Synthetic fragment ASP.

25  
 <400> 13  
 gtcgactgac gcttcgaatg acgcacatgc c 31

30  
 <210> 14  
 <211> 1065  
 <212> DNA  
 <213> Artificial sequence

35  
 <220>  
 <223> Artificial sequence description:  
 p2A1PARTE vector between the restriction sites KpnI and SacI.

40  
 <400> 14  
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 tccgcaccac cgcacgtctc gcagccaaaa aaaaaaaaaa aaagaaaaaa aagaaaaaga 120  
 aaaaacagca ggtgggtccg ggtcgtgggg gccggaaaaa cgaggaggat cgctgacgct 180  
 tcgaatgacg cacatgcccg agcagcgacg aggcggccc tccctccgct tccaaagaaa 240  
 cgccccccat caattctata tataggaagt tcatttcatt tggagcccc caaccctacc 300  
 accaccacca ccaccacctc ctccctcaca caacacacac acaacagatc tcccccatcc 360  
 45 tccctcccg tgcgcgcgcg aacacctggt aagatggctg tgcgctcaga tatatatagt 420  
 gatatgcact acaaagatca taactagacc gccgcctccc ccccccccc tctctacctt 480  
 ctctctttct ttctcgtttt tttttttccg tctcgtctcg atctttggcc ttggtagttt 540  
 gggggcgaga ggcggttcg tcgccagat cggtgcgcgt ttttttattt ggaggggcgg 600  
 gatctcgcgg ctgggtctcg gcgtgcggcc ggattctcgc ggggaatggg gctctcggat 660  
 50 gtggatctga tccgcggtt ttgggggaga tatggggcgt ttaaaatttc gccatgctaa 720  
 acaagatcag gaagagggga aaagggcact atggtttaat ttttatatat ttctgctgct 780  
 gctcgtcagg attagatgtg cttgatcttt cttctctctt tttgtgggta gaatttgaat 840  
 ccctcagcat tgttcacggt tagtttttct tttgtcgatg ctcaccctgt tgtttggtgt 900  
 ttttatacta gtggctatcc tgacacggtc tctttgtcaa atatctctgt gtgcaggat 960  
 55 aactgcagga aacaaattga acatcattct atcaatacaa cacaaacaca acacaactca 1020  
 atcatttatt tgacaacaca actaaacaac catggtctag agctc 1065

60  
 <210> 15  
 <211> 1135  
 <212> DNA

<213> Artificial sequence

<220>

<223> Artificial sequence description:

5 p2APARTE vector sequence between the restriction sites SalI and SacI.

<400> 15

10 gtcgactgac gcttcgaatg acgcacatgc catccatagc aagcccagcc caacccaacc 60  
 caacccaacc caccaccagt cagccaactg gcaaatagtc tccacacccc ggccactatca 120  
 ccgtgagttg tccgcaccac cgcacgtctc gcagccaaaa aaaaaaaaaaag aaagaaaaaa 180  
 aagaaaaaga aaaaacagca ggtgggtccg ggtcgtgggg gccggaaaag cgaggaggat 240  
 cgctgacgct tcgaatgacg cacatgcccg agcagcgacg aggccggccc tccctccgct 300  
 tccaaagaaa cgcccccat caattctata tataggaagt tcatttcatt tggagcccc 360  
 15 caaccctacc accaccacca ccaccacctc ctccttcaca caacacacac acaacagatc 420  
 tcccccatcc tccctcccgt cgcgcgcgcg aacacctggt aagatggctg tgcgctcaga 480  
 tataatatag gatatgcact acaaagatca taactagacc gccgcctccc ccccccccc 540  
 tctctacctt ctctctttct ttctccgttt tttttttcog tctcgtctcg atctttggcc 600  
 ttggtagttt gggggcgaga ggccgcttcg tcgccagat cggtgcgcgt ttttttattt 660  
 20 ggaggggagg gatctcgagg ctgggtctcg gcgtgcggcc ggattctcgc ggggaatggg 720  
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 gccatgctaa acaagatcag gaagagggga aaagggcact atggtttaat tttatatat 840  
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 25 tgtttggtgt ttttatacta gtggctatcc tgacacgggc tctttgtcaa atatctctgt 1020  
 gtgcaggat aactgcagga aacaaattga acatcattct atcaatacaa cacaacaca 1080  
 acacaactca atcatattt tgacaacaca actaaacaac catggtctag agctc 1135

30 <210> 16  
 <211> 31  
 <212> DNA  
 <213> Artificial sequence

35 <220>  
 <223> Artificial sequence description:  
 1.

<400> 16

40 gaaggtaccg ccatggtcta aaggacaatt g 31

<210> 17  
 <211> 27

45 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Artificial sequence description:  
 50 Oligonucleotidic primer Oli-U2.

<400> 17

ctcctcgagg gcgtttaaca ggctggc 27

55 <210> 18  
 <211> 186  
 <212> DNA  
 <213> Artificial sequence

60 <220>

<223> Artificial sequence description:  
Synthetic fragment En-U2.

<400> 18

5 ggtaccgagc attgcatgtc taagttataa aaaattacca catatTTTTT ttgtcacact 60  
tgTTTgaagt gcagTTTatc tatcTTTata catatattta aactTTTactc tacgaataat 120  
ataatctata gtacaacaat aatatcagtg tTTtagagaa tcatataaat gaacagttag 180  
acatgg 186

10

<210> 19

<211> 563

<212> DNA

<213> Artificial sequence

15

<220>

<223> Artificial sequence description:

Maize ubiquitin-1 gene derived transcriptional enhancer sequence  
(region from -299 a -855).

20

<400> 19

ggtaccgagc attgcatgtc taagttataa aaaattacca catatTTTTT ttgtcacact 60  
tgTTTgaagt gcagTTTatc tatcTTTata catatattta aactTTTactc tacgaataat 120  
ataatctata gtacaacaat aatatcagtg tTTtagagaa tcatataaat gaacagttag 180  
25 acatggtcta aaggacaatt gagtattttg acaacaggac tctacagttt tatcTTTTta 240  
gtgtgcatgt gttctccttt tTTTTgcaa atagcttcac ctatataata cttcatccat 300  
tttattagta catccattta gggTTtaggg ttaatggTTt ttatagacta atTTTTtag 360  
tacatctatt ttattctatt ttagcctcta aattaagaaa actaaaactc tattTTtagtt 420  
tttttattta ataatttaga tataaaatag aataaaataa agtgactaaa aattaaacaa 480  
30 atacccttta agaaattaaa aaaactaagg aaacattttt cttgtttcga gtagataatg 540  
ccagcctggt aaacgccctc gac 563

<210> 20

35 <211> 1692

<212> DNA

<213> Artificial sequence

Secuencia <220>

40 <223> Artificial sequence description:

pU3ARTE vector sequence between the restriction sites KpnI and  
SacI.

<400> 20

45 ggtaccgagc attgcatgtc taagttataa aaaattacca catatTTTTT ttgtcacact 60  
tgTTTgaagt gcagTTTatc tatcTTTata catatattta aactTTTactc tacgaataat 120  
ataatctata gtacaacaat aatatcagtg tTTtagagaa tcatataaat gaacagttag 180  
acatggtcta aaggacaatt gagtattttg acaacaggac tctacagttt tatcTTTTta 240  
gtgtgcatgt gttctccttt tTTTTgcaa atagcttcac ctatataata cttcatccat 300  
50 tttattagta catccattta gggTTtaggg ttaatggTTt ttatagacta atTTTTtag 360  
tacatctatt ttattctatt ttagcctcta aattaagaaa actaaaactc tattTTtagtt 420  
tttttattta ataatttaga tataaaatag aataaaataa agtgactaaa aattaaacaa 480  
atacccttta agaaattaaa aaaactaagg aaacattttt cttgtttcga gtagataatg 540  
ccagcctggt aaacgccctc gactgacgct tcgaatgacg cacatgccat ccatagcaag 600  
55 cccagcccaa cccaacccaa cccaaccac cccagtgcag ccaactggca aatagtctcc 660  
acaccccgcc actatcacgc tgagtgtcc gcaccaccgc acgtctcgca gccaaaaaaa 720  
aaaaaagaaa gaaaaaaaag aaaaagaaaa aacagcaggt gggTccgggt cgtgggggcc 780  
ggaaaagcga ggaggatcgc tgacgcttcg aatgacgcac atgcccagc agcgacgagg 840  
cgggccctcc ctccgcttcc aaagaaacgc ccccatcaa ttctatatat aggaagtcca 900  
60 tttcattttg agcccccaa ccctaccacc accaccacca ccacctctc cttcacacaa 960  
cacacacaca acagatctcc cccatcctcc ctccgctcgc gccgcgcaac acctggtaag 1020

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gcctccccc cccccctct ctaccttctc tctttcttcc tccgtttttt ttttccgtct 1140
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tgcgcggttt tttatttggg ggggcgggat ctgcggtggt ggtctcggtg tgcggccgga 1260
5 tttctcggtg gaatggggct ctcggtatgt gatctgatcc gccgttgttg ggggagatat 1320
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gtttaatttt tatataattc tgctgctgct cgtcaggatt agatgtgctt gatctttctt 1440
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gtcgatgctc accctgttgt ttggtgtttt tatactagtg gctatcctga cagggtctct 1560
10 ttgtcaaata tctctgtgtg cagggtataac tgcaggaaac aaattgaaca tcattctatc 1620
aatacaacac aaacacaaca caactcaatc atttatttga caacacaact aaacaacat 1680
ggtctagagc tc 1692

15 <210> 21
    <211> 223
    <212> DNA
    <213> Artificial sequence

20 <220>
    <223> Artificial sequence description:
        Synthetic fragment GLU.

25 <400> 21
    ctcgagatac atattaagag tatggacaga cttttcttta acaaactcca tttgtattac 60
    tccaaaagca ccagaagttt gtcattggctg agtcattgaaa tgtatagttc aatcttgcaa 120
    agttgccttt ccttttgtag tgtgtttttaa cactacaagc catatattgt ctgtacgtgc 180
    aacaaactat atcccatgt atcccaagat gctttttttaa ttc 223

30 <210> 22
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    <212> DNA
    <213> Artificial sequence

35 <220>
    <223> Artificial sequence description:
        pGARTE vector sequence between the restriction sites XhoI and SacI.

40 <400> 22
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    tccaaaagca ccagaagttt gtcattggctg agtcattgaaa tgtatagttc aatcttgcaa 120
    agttgccttt ccttttgtag tgtgtttttaa cactacaagc catatattgt ctgtacgtgc 180
    aacaaactat atcccatgt atcccaagat gctttttttaa ttctatataat aggaagtcca 240
45 tttcatttgg agcccccaa cctaccacc accaccacca ccacctctc cttcacacaa 300
    cacacacaca acagatctcc cccatcctcc ctcccgctgc gccgcgcaac acctggttaag 360
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    gcctccccc cccccctct ctaccttctc tctttcttcc tccgtttttt ttttccgtct 480
    cgtctcgatc tttggccttg gtagtttggg ggcgagaggc ggcttcgctg cccagatcgg 540
50 tgcgcgtttt tttatttggg ggggcgggat ctgcggtggt ggtctcggtg tgcggccgga 600
    ttctcgcggt gaatggggct ctcggtatgt gatctgatcc gccgttgttg ggggagatat 660
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60

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